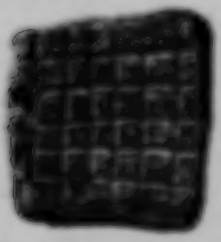
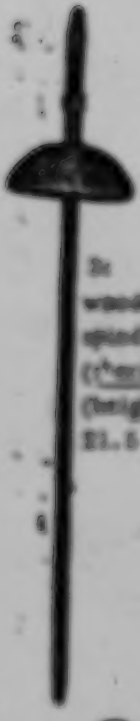
Ancorage

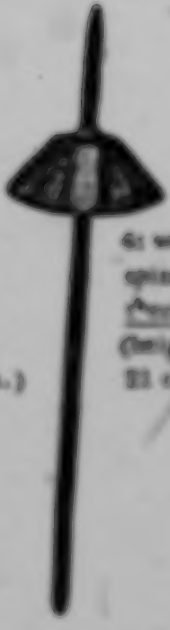


1: Stone polisher to soften leather (height: 7.5 cm. width: 7.2 cm; thickness: 3.5 cm.)

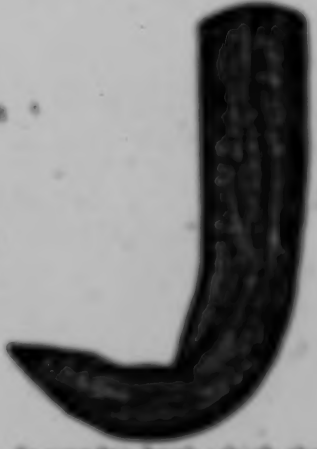
1: perforated stone used as ballast to sink herring nets (diameter: 9.9 cm.) (GM. 31.44.44)



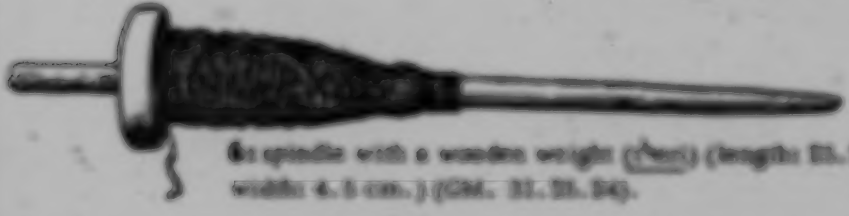
1: wooden spindle (ʔhaxi) (height: 21.5 cm.)



4: wooden spindle ʔhaxi (height: 21 cm.)



1: wooden hook which the Ute use for making their twines (kaxin, ʔkaxi)



1: spindle with a wooden weight (ʔhaxi) (length: 33.2 cm. width: 4.5 cm.) (GM. 31.33.34).

Fig. 24

/83 cont. /

231 Animal raising. They raise *guinea pigs* on their huts, which renders habitation there even more disagreeable. They have several flocks of sheep, pigs, and cows; those of the latter along the shores of the Desaguadero have become amphibious. They spend the entire day in the water and graze on water plants. From afar one would take them for buffalo in some Balkan swamp.

242 252 Cooking. The diet of the Uro is that of all the Indians of the altiplano: potatoes cooked in water, chuño (potato ferula), boiled or roasted meat, maize, broad beans, quinua, cañaza, etc. The Uro add to this a dish of their own creation: the juicy pith of the totora. The edible part of this plant is the base of the stalk. It does not need to be prepared in any way.

252 (179) The Uro have preserved a method of cooking which is very old and whose distribution in South America, completely unusual, corresponds perhaps to a very archaic cradle of civilization: this is the subterranean oven, or Polynesian oven. "These ovens, which the Uro call wasaña, consist of a hole dug in the earth whose depth, equal to the diameter, is about 80 centimeters. The rounded edge juts out at the level of the ground, and the entire interior is plastered with clay. The Uro light a fire inside and put in stones which are more or less flat. When the rocks are incandescent they are withdrawn, with the exception of those on the bottom. On top of them is laid a bed of fish, on which is placed a second bed of stones, then a second bed of fish, and so on until the oven is full. It is then closed with rocks which are covered with rushes. The fish thus cooks by steaming" (Paleoveicos).

251 They preserve fish by drying it on mats after having /but/ salted it. They do the same with the birds, whose flesh is cut up and exposed to the rays of the sun.

273 They make a beer called cavinabacio from cañaza seeds (Paleoveicos).

Manufacture of balsas. The most important industrial activity of the Uro is the manufacture of rafts of totora, or balsas, to be provided with which particularly all the shore-dwellers on the Titicaca come to them. As these small craft deteriorate rapidly

(cont.)

the Uru are obliged to keep up with an increasing demand. They have workable maritime shipyards on the steep bank of the Desaguadero, where constant activity reigns (Pl. IV, A /see p. 34/).

Each family owns a portion of the totora, whose knots are marked by small walls. Within these enclosures they keep the totora from which the balsas are made. This plant (Cyperaceae, of the genus Scirpus) (Scirpus totora, Kunth.) forms actual fields in the swamps which line the Titicaca. The Indians come to cut it as they need it. "Every family that owns a field near the shore considers itself the owner of a certain expanse of these totoras. It is the only family to exploit this area, and its rights are respected by the neighbors (1)."

1. French (Lorenzo R.). "Las balsas usadas por los aymaras en el lago Titicaca /The balsas used by the Aymaras on Lake Titicaca/." Physis. Revista de la Sociedad argentina de ciencias naturales. Vol. XI (Buenos Aires, 1933), pp. 161-168.

It is a picturesque spectacle to see the Indians who went in search of totora return; the cut stalks have been tied together into huge bundles which are allowed to float like a train of wood when being towed to the rear of the balsa (Pl. III, A /see p. 33/).

The totora can be used only when it is dry. Hence, after having gathered it the Indians' first concern is to spread it out in their enclosures. They also make faggots out of it by standing the stalks upright to expose them to the wind and sun. It is only when it has lost all dampness that the totora can be used to construct balsas. Its thickness is thereby diminished, its immediate decay prevented, and, above all, the possibility that the bundles which constitute the balsa might disintegrate because of a loss in volume is avoided.

/84 cont./

The construction of these rafts is rather simple, although it demands great manual skill and considerable expenditure of strength. The keel is composed of two enormous spindle-shaped sheafs of totora tied together. The natives obtain them by heaping up and interweaving stalks of totora of unequal length (Pl. IV, 3 /see p. 24/); they take care that the shortest remain inside and they cover these with progressively longer stalks until the total forms a compact mass. The rope which maintains each of these coils /83/ /Fig. 25 appears here/ /86/ is crossed at each turn with that of the other sheaf. Two padded rims are then fastened to the edge, where they serve as a railing and add to the stability of the craft. The only instrument to which the Indians have recourse in making these rafts is a wooden hook (Fig. 24, 5 /see p. 15/), which they use to lift the straw rope, either to tighten it or to pass the rope which joins one sheaf to the other under it. This alternating play of the ropes obliges the balsa constructors to work always two by two (Pl. IV, C /see p. 24/). For navigating, the Uro have long bamboos, /cheqo/, the wood for which comes from the eastern slopes of the Andes. The extremity of these poles ends in a sort of trident which prevents them from sinking too deeply in the mud of the lake (Fig. 25, 2 /see p. 15/).

Mats. The Uro Indians have several uses for the rush (totora) mats. They make the framework and roofs of their huts from it, their beds, the door of their house, and the sails of their balsas. Making them is not complicated. The totora stalks are spread out on five or six parallel ropes, stretched between stakes, and attached to them in little piles.

Rope-making. The Uro are obliged to constantly make rope, the indispensable accessory for the two industries which have just been mentioned. Different types of gramineous plants, among them the /cheqo ichu/ Kunth, Festuca orthophylla Pilger, and F. dasyphylla Griseb (1), furnish them with raw material of

p. Bernal, p. 9.

[text continues on p. 16]

396
[50]

A. A boatyard for balsas at Ancoaqui.

[291]
←

B. Manufacture of balsas.

396
291

C. Manufacture of balsas.

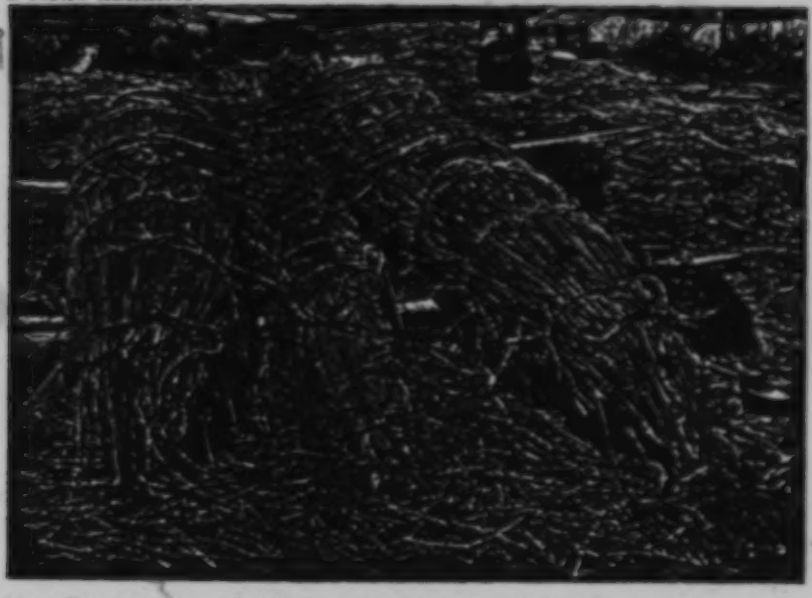
[End Plate 3]

3:Vellard--6d D.E-5 (1938-1944) 1949 SF24 Uru SF24

283
412

9. Fisher preparing straw ropes to make a balsa. He is using a stone hammer.

396
824



10. Construction of a balsa: preparation of the three totora cylinders: the heart and the two side parts.

/171 cont./

#539 191 193 1. píni means "many"; with hána it may be rendered by "no more"; uč̌úmi, exclusive personal pronoun /172/ for the first person plural. 2. ʒaĺák, probably the Spanish chacra, "cultivated field"; the Uru do not have their own word to designate fields. 4. The ending ʒay added to a root gives it [136] the verbal form. 6. xui, interrogative particle. 7. suche, small kind of sheatfish from the Titicaca region; it is the [824] Trichomycterus dispar. 8. totora, Scirpus totora, the reeds of Lake Titicaca used by the Uru to build their balsas, cover their houses, and for other uses. 12. ke-, particle of repeti- [101] tion. 14. ɨ̀ɔxɬa, literally "other persons," designates all men other than the Uru; nak' for nɬ́ka, plural form of pronouns.

#539 392

II. Manufacture of Balsas from Totoras
(Account by Manuel Inta)

(See p. 154 /in the foreign text/)

Free Translation

1. Let us go, as is our custom, to find totoras to make a [283] balsa. 2. We are accustomed to go far to make the straw ropes /necessities/. 3. Three days are needed to dry (the straw ropes). 4. The straw ropes are well dried now. 5. Now all these totoras are well dried. 6. Let us make the balsa. 7. A man cuts the totora. 8. The totora is tied (in bunches). 9. Three have to be made (bunches of totora): the heart (the middle spindle) and the two side spindles of the balsa. 10. We tie (the spindles); now we are going to squeeze them together very tightly, at first it takes two men to squeeze it together. 11. We have the custom of sprinkling (the totora) with water so that it does not dry. 12. Now we are going to tighten; to tighten we are accustomed to use a hook. 13. We beat (the totora) with /173/ a rock (in order to compress it).

/173 cont./

14. We are going to place a rim of totoras. 15. He attaches the rim of the balsa. 16. He tightens the rim of the balsa. 17. We are going to finish. 18. (The totora) is still a bit loose; we are going to tighten it a bit more. 19. All is finished. 20. Now the balsa is ready. 21. Let us go fishing with the new balsa. 22. We are not going to hoist a sail? 23. We are not accustomed to use a sail; there is too little water. 24. We always use a boat hook manipulated by hand. 25. Here is the stone which is attached to the large net so that the fish can enter. 26. The fish is going to enter (the net); now we are going to lift (the net) up and put it in the balsa.

Remarks

This text is divided into two parts. The first, 1 to 20, describes the making of balsas from totoras. The second is a succinct description of fishing with a net in the swamps of the Desaguadero.

To build their balsas the Uru use the Scirpus totora, which used to grow in abundance in the swamps of the Desaguadero and at numerous points on the shores of Lake Titicaca. Two Indians work at the same time on the construction of a balsa. First they lay out the bunches of totoras on the ground, from which they make three spindles the length of the balsa, two large side ones and a middle one which is shorter and thinner; this middle cylinder, the "heart of the balsa," used to stabilize the craft, has passed unnoticed by practically all the authors who have concerned themselves with the Uru. Only the fishers on the lagoon of Arapa, to the north of Lake Titicaca, who speak Kelwa, build balsas, small and rather narrow, formed with two cylinders.

The totora of three cylinders is held in place with the aid of thin straw plaits (2-4), which hold the cylinders evenly between them. These straw ropes are tightened in a progressive and methodical fashion by two /174/ men, working alternately

/174 cont./

*539 37 39 on each side of the balsa (10, 12, 17) in order to make the two large side cylinders equal in weight, bulk, and compression. This is the delicate part of the manufacture, on which the stability and quality of the craft depend. The Uru use wooden hooks for this job (12). At the same time they compress the totora with a stone hammer (13), adding or removing totora as necessary; they water it from time to time to prevent it from drying. When the work is finished the middle cylinder, the heart of the balsa, completely hidden between the side [241] cylinders, is invisible. Depending on the size, the construction *536 of a balsa takes an average of three to six days. The life of a 23 50 balsa is short; after having been wet they become heavy and rot inside; they are good for six months to one year in general.

The balsas used on the Desaguadero and on the low parts of the lake in the neighboring lagoons which are not very deep (Arapa, Umamayo) do not have sails (23), or only a very small sail, in contrast to the balsas on the large lake which they propel by sail. The Uru steer them with the help of a boat hook ending in three teeth, which they push against the muddy [211] bottom (24). These boat hooks are identical to those of the Guatos of upper Paraguay, who belong to the Nu-Arwak /Nu-Aruak/ linguistic group.

*539 193 From the point of view of grammar, note the frequent use of the repetitive particle -ʔu-, indicating that the action expressed by the verb is habitual. Also note the repetitions of words or roots to reinforce the idea expressed (3-12, etc.)

The verb kiñi' ʔay expresses the idea of carrying off, of lifting up, of raising (22-23); compare it with 4-5 of text III.

9:La Barre E-5 (1937-1938) 1946
SF24 Uru SF24

DRESS AND ORNAMENTS

Anciently, it is said, the *Uru* went entirely nude, which is quite incredible in view of the bitterly cold winters in this region. The essential male costume is like the pre-Columbian *Chipaya* uncu—a sleeveless, sacklike garment made of an untailored textile, sewed partway up the sides with openings for the arms, and partway across the top with an opening for the neck. This is woven of llama yarn on a simple loom staked in the ground. Recently, most *Uru* males have adopted trousers of the *Aymara* style: short, with a slit at the heel, and tailored of native homespun after a Colonial pattern. The slit permits the trousers to be rolled up more easily when a man fishes from a balsa or wades in shallow water. Leather sandals are sometimes worn when traveling, but people usually go barefoot. A knit wool cap, with *Aymara*-style earflaps, is sometimes topped with a crude, *Aymara*-manufactured felt hat. A belt is sometimes worn, and occasionally a thick woolen poncho. Caps woven of bird feathers were known in ancient days. 291 [286] [179] [177] [237]

Uru women wear black llama-wool skirts, girdled at the waist, and untailored bodices pinned at the top over each shoulder with a large-headed copper pin (tupu). When traveling in cold weather, the women wear woven woolen wimples over the head under the hat.

Women part their hair in the middle and wear it in two braids tied behind the back with vicuña-wool filets; only a few still wear the ancient style "Titicaca braids"—countless small braidlets all over the head. Women wash their hair in fermented human urine. *Uru* men wear their hair short in quasi-European fashion or in an all-around tropical bang. 302 [237]

BOATS

The *Uru* are famous balsa builders (pl. 115, *bottom*). Their craft, though actually rafts made of totora reeds, are shaped like boats and are highly navigable even in narrow, shallow swampways. The reeds are cut with knives attached to poles, then, after drying, are stacked in shocks like corn. Nearly every able-bodied *Uru* male has quantities of this material in all stages of preparation for balsas. During spare moments in their houses, they are continually braiding ixtle grass into tough ropes to bind the reed bundles. The keel is formed of a long, thin, tubular bundle of reeds; and separately lashed to this keel are two thick, cigar-shaped pontoon-bundles. Each of these pontoons is built up of reeds so arranged as to be very thick in the middle of the boat and to have upturned points at each end. An acute-angled wooden tool with a groove inside one arm is used to tighten the binding. To keep out small waves, gunwales consisting of much thinner bundles of totora are lashed to the upper outside 396 [501] [824]

5:La Barre E-5 (1937-1938) 1946
SF24 Uru SF24

396 edge of the pontoons. The whole makes a sea-sled type of hull, which will not easily overturn even in the fierce storms of Lake Titicaca.

501 The balsa is poled along with a stubby trident, the wood for which comes from the yungas east of the Cordillera Real. In the open lake, a trapezoidal reed sail is rigged on two poles stuck deeply into the pon-[502] toons and forming an inverted V. The balsa is unable to tack in the wind, however, for it lacks a centerboard. Balsas are dragged onto the land from time to time lest they become waterlogged and rot. [935 861] Though they may be bought for 10 to 16 Bolivian dollars (bolivianos), they represent much labor.

MANUFACTURES

824 *Uru* material culture is simple. Owing to the lack of trees, the giant totora reed (*Scirpus tatora*) is of extraordinary importance, providing material for fishweirs, roof mats (pl. 117, *top, left*), floor and sitting mats, rafters, doors, balsas, sails, and even food for ani-325 mals and people. Metallurgy is unknown. Pottery making has been 323 198 abandoned in recent times.

Basketry.—Crudely coiled baskets and twined tortora reed baskets 285 are made.

286 **Textiles.**—The *Uru* make twine bird nets, mats of various types, sails, grass rope, and simple baskets (both coiled and twined). Women [283] spin llama wool as incessantly as the men make grass rope, using a wooden spindle. They weave the yarn into cloth on a simple bar loom staked taut on the ground (pl. 116, *top*), rolling up the finished cloth on the end bar. When the end of the warp is approached, they weave from the other end, and finally fill in the last intermediate strip with a needle. Knitting is not pre-Columbian here, but *Uru* women are very skilful in knitting *Aymara*-type caps (gorros), often with amazingly intricate animal figures and other designs. Men's sling-283 shots are very beautifully braided of wool with varicolored diamond [911 531] designs like the markings on snakes. The *Uru* also make thongs of twisted rawhide still retaining the fur, and heavy braided woolen ropes for lashing loads on burden animals.

286 An extremely interesting textile, apparently unique to the region 291 southeast of Lake Titicaca, is a kind of feather cloth described by David Forbes (1870). The down of lake birds was spun into thread, and then knit into caps and children's socks and gloves. Only a few specimens of these exist in museums.

41 **Weapons.**—To make bolas, the *Uru* buy cotton thread from traders [431 284] and wind this tightly around a cord Y to make a durable bird-hunting weapon. A straw-cord bola perdida, similar to that of Patagonia, is also used.

325 **Metals.**—The *Uru* know no metallurgy, although the *Aymara* of Jesús de Machaca, scarcely a day's journey away, are famous for their

S.Pain T-S (ca.1954) 1955
SP24 Uru SP24
Tour 24a

retire to our respective quarters. Before leaving, I arranged the remaining provisions, carefully propping up a thermos containing our precious hot coffee for the morning. I have but few maxims, the principal one being to brush my teeth. I therefore hunted for a bottle of water and found it empty. My hygienic preoccupations vastly amused my companions, and someone offered me a bottle of lager. Not wishing to lose face I accepted, declaring that there was no better mouthwash, but feeling secretly rather sick at the idea of a combination of colgate and beer. But on carrying out the experiment, I found out that there *is* no better mouthwash in existence. By now the moon was high and full, and so strong was the light that finding it impossible to sleep I switched on the engine for heat, as in spite of my vicuña-lined sleepingbag, the cold was intense. I read for an hour or so, which gave me such a headache, that I had to take aspirin with the remaining beer. The next morning Abelot and I wound our way down to the river, which was frozen at the edge. We broke the ice, drew some water and washed, much to the surprise of the villagers. Again I brushed my teeth with the last drops of beer before the astonished gaze of the people who had never seen such a strange exhibition.

Arriving at the mayor's, we found the rest of the company singularly unglamorous and, o tragedy, someone had kicked over the thermos of coffee. We ate some apples and biscuits, but our depression melted away in the brilliant sun. The sky was blue as it is only to be seen on the Roof of the World. While the professor went off to take some sound-recordings, we explored the village. There was practically no sign of animal life or cultivation. This was normal, as the Aymara peasants refuse to allow the Uru, whom they consider as pariahs, to cultivate the ground. They have a narrow strip of shore on which to build their *balsas*.

We returned by the little church. Very occasionally a priest comes over from Guaqui on the lake. There

[TEXT CONTINUES ON P. 313-A]

[p. 310-B]

B.P.Bib. T-6 (ca.1954) 1955

BP54 Urn BP54
Env. 2 No.

were some withered Palm-Sunday decorations made from the rushes which border the river. They were plaited and twisted and fringed and hung on rusty nails. The door stood partially open. A low adobe wall surrounded the building. There were no tombs in evidence. A family of donkeys had taken up their residence there. We gave them some biscuit and apple, and they followed us down the stony path to where the village was assembled. The cameras were ticking, and our chauffeur Carlos had been promoted to stagehand with a wooden clapper. Our star was continuing her role with renewed enthusiasm; leaning against the wall were two boys 11 or 12 years old, one had beautiful smooth regular features. I photographed him, but he never moved, nor seemed conscious of our presence. We left him standing motionless and followed the younger one down to the river where a man was plaiting rushes, preparatory to making a balsa.

Some fifteen years ago the whole region suffered from a severe drought. The watersheet of the lake descended from twelve to fifteen feet and many of the marshes dried out, and the reeds, the *totora*, withered and disappeared. These totoras play as important a part among the Urus as the llamas among the Aymara or Quechua on the Altiplano. While the stems are used for making balsas, sails and ropes, the roots or *kauwas* are the staple diet of the Uru, who also use it to brew a kind of beer, allowing the tubercles to ferment.

Fortunately in these last few years the climatic conditions have once more returned to normal, and with the rise of the lake the totoras have once more increased. These rafts, with their tall pointed bows, have the gracefulness of a gondola. They are composed of three cylinders, two forming the sides and one the centre. The rushes are plaited into long braids, the end being held between the man's toes. These braids are then plaited together and together again, and all these ropes are assembled, entwined and laced together. Two men work simultaneously,

[J. 313-A]

R.Pein T-6 (ca.1904) 1905

BPM Dlg BPM
T-n 274

tightening the braids with little wooden knots, taking care that the two parallel cylinders have exactly the same size and weight, so that the balsa will not capsize. Herein lies the art of balsa-building. While the construction is in progress, a third man waters the cylinders, so that the reed remains slightly damp. For hours on end they tighten the cords, and with a little stone hammer they tap the braids together so that they end by forming a substance hard as wood. The balsa is then turned over, the two pointed ends are placed in holes in the ground, and earth is tightly packed around them, so that they may keep their form. Here they remain for several days, afterwards they are taken out, and a hole is made in which the mast is placed, and the reed sail is attached to it by three cords. In the very small balsa the fisherman holds a stick to which a little sail is attached. The large balsa measure between twenty-one and twenty-five feet. They draw about forty cms. of water and can carry from eight to ten passengers. The small balsa is about seven feet long and carries two passengers. When not using a sail, they employ a long double paddle, or a pole-pole when circulating among the rushes. The life of the balsa is short: they are built in three or four days, but they are rarely deemed safe for use on the lake, where storms are frequent for more than six months in the year. Generally they end their days as punts which keep to the edge of the lake among the rushes.

The cameras were set up, and I took photographs and then wandered up the river, where suddenly I perceived the raucous lady, who was if possible even more insulting than on the previous day. Seeing the camera, which she doubtless took for the eye of Satan, she flung a stone which missed me by yards, and, uttering more curses, fled, making the sign of the cross and at the same time keeping her fingers crossed, so as to be well on the safe side with all the forces of the supernatural. We had by now filmed and photographed the population from almost every

9 La Barre E-4,5 (1938) 1941
SF24 Uru SF24
Aymara SF5

wooden balls and a small grooved, ovoid stone for the handgrip.[8] They have no firearms, nor have they ever possessed them apparently. The bow and arrow is likewise lacking, spears are used only in obtaining fish.

An interesting group-hunt at determined periods employs both men and sometimes women. They stretch in selected sites extensive nets, sometimes hundreds of meters long, for birds whose flight is near the surface of the water; the nets are extended below the surface also, to prevent the escape of diving birds. They anchor the nets to faggots or clumps of *totora* set in slightly curved lines. Then hunters in their *balsas* make much noise and frighten the birds into the almost invisible nets, where they can despatch them with clubs (*yuñuna*), and kill with their *balsa* those which attempt to escape. Uru also eat the eggs (*huñi*) of aquatic birds. The flesh of the birds is cut into strips, hung in the sun, and dried into a kind of *charqui* ("jerky," from the Aymará *ch'arki*).

The Uru do little hunting of land animals. Vicuñas (*Auchenia vicuña*; *wakaña*, a word obviously related to Aymará *kaja*, llama) are extremely scarce or absent, as are also guanacos. It is said, however, that in winters of very extreme cold[9] small groups of vicuñas may stray down into the Desaguadero region. The head male of the herd is lassoed, and the others of the herd, immobilized by the cold, are speedily killed. The small rodents of the pampas, like the viscacha (*chiñi*), apparently are not hunted by the Uru. Most of the birds they kill, like a good proportion of the fish they catch, they take to the villages to trade for other food and necessary articles, since these are their sole source of revenue, beyond their *balsa*-making.

Material Culture. The stalks of the giant reed *totora* (a *Cyperaceous* plant, *Scirpus totora*) are surely the most important substance in Uru material culture: of them they make fish-weirs, supports for bird-nests, roof-mats, floor- and sitting-mats, rafters, doors, *balsa*-boats and their sails; and the few cattle they have browse upon the roots of the *totora* as well. Unless *balsas* are frequently removed from the water and thoroughly dried, they last scarcely longer than a year or two before rotting. The Uru *balsa*-builders are famous and supply many of their Aymára neighbors with them in the south-western region of Lake Titicaca. The reeds must first be cut with

[8] An Uru hola from the Desaguadero is now in the possession of Dr Frank G. Speck, in his private collection at the University of Pennsylvania.

[9] The Aymara have a phrase to designate extreme cold or "bean-monkey" weather: *q'ala* ("stone"), *lakaya* ("to split"), *wari* (vicuña), *q'aseya* ("makes cry"), i.e. weather cold enough to split stones and make the fluffy-wooled vicuña scream. The Aymára schoolboys in La Paz—according to my "chulo" interpreter, the late Moisés Alvarez, who was one of them—have made a very effective football ("futbol") yell of this familiar phrase: *q'ala lakaya wari* (*"stone, split, deer"*)

9:La Barre E-4,5 (1938) 1941
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396 knives on the ends of poles, then stacked in shocks like corn, after they have been dried spread out in the sun. Nearly all able-bodied Uru finales have quantities of these materials in various stages toward the manufacture of the complete boats. In their houses, even, in spare moments, men are continually braiding *ilu*-grass into tough ropes to bind the boats together.

Though shaped like a boat, the *balsa* is of course actually a raft. A handful of reeds is bound together and repeatedly thickened with more reeds as the middle of the cigar-shaped element is reached, then tapered off again into a point. The only tool used in the manufacture of this is a wooden hook [413] (*kayda*) with a handle at an acute angle to it, used to tighten the lashing of grass rope. A more tubular and thinner sheaf of reeds forms the keel of the *balsa*, and two of the fat cigar-shaped bundles are separately lashed to it, forming a sort of sea-sled type of hull, which cannot be overturned in a storm; the thinner ends of these cigar-shaped bundles are slightly raised fore and aft of the boat. To form gunwales, a still thinner and tubular sheaf of reeds is lashed (during its own round-and-round binding with braided grass rope) through the original lashing of the hull-elements. One of these gunwales (*pisla*) is placed on each side of the top of the hull-elements to prevent splashing of water onto the occupants of the boat as it is poled 501 along. The Uru *balsa* thus differs from the Aymára[36] type in that its two [191] large basic elements are lashed to a central "keel" and not to each other (though the bulwark lacings are similarly looped through the lacings of the two hull-elements); it has therefore five instead of four elements. The Uru also rig their *totora*-mat sails with a slight difference from the Aymára. [502] Sails, however, can only be used on the Lake and on the open river "before the wind" since the boat has no center-board and cannot tack. In the narrow swampways a punt pole or gaff (*takni*) with a stubby trident at its end is [824] used to push the boat along. The wood for these comes from the *yungas* of 501 the Cordillera Real's eastern, tropical slopes. (See Posnansky, Fig. 83.) A 435 complete *balsa* cost in 1937 from ten to sixteen *bolivianos*, then worth about 5*s*.

285 Of Uru textiles we have already noted twined single-element *totora balsa*-sails, twined many-element mattress-mats of reed, fish- and bird-nets (which they themselves make of cord obtained in Guaqui from La Paz), and 283 single-element twined roof mats of *totora*. Métraux has an excellent description (page 86) of the preparation by soaking, pounding, and rolling of the wiry grasses of the region (*Stipa ichu*, *Festucha orthophylla*, and *F. dis-*

[113] [36] Lorenzo R. Parodi, *Los balsas usadas por los Aymaras en el lago Titicaca* (Physis, Revista de la Sociedad argentina de ciencias naturales, Vol. 11, Buenos Aires, 1932), pp. 143-149. Métraux' description (JSAP 27: 84) is of the Aymára type.

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Fig. 1. Making an Ona baby, Arroyo Dolor.